NA-110

Network Appliance

User's Manual

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Safety Approvals

- CE Marking
- FCC Class B

1. FCC Compliance

This equipment has been tested and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. If not installed and used in accordance with proper instructions, this equipment might generate or radiate radio frequency energy and cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measurers:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

Safety Precautions

Before getting started, read the following important cautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
2. Disconnect the power cords from the NA-110 before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the NA-110 is properly grounded.
3. Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

   - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
   - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

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CHAPTER 1
INTRODUCTION

This chapter contains general information and detailed specifications of the NA-110 Network Appliance Server. Chapter 1 contains the following sections:

- **General Description**
- **Features**
- **Specifications**
- **Dimensions**
- **I/O Outlets**

1.1 General Description

The NA-110 is a 1U slim type and fanless network security hardware platform for VPN, firewall and other network security applications, which consists, can support AMD G-Series APU T24L. The system sports DDR3 1066 memory with single channel up to maximum 4 GB for one SODIMM slot. In the meantime, the platform also can support 4 Gigabit LAN ports which can provide best throughput. For the purpose to store event log data, it can deploy one 2.5" SATA2 HDD. This platform can be easily enabled through application programs to make a user-friendly appliance for customers, and provide the highest ever performance of encryption and decryption.

1.2 Features

Low power and high performance for network security field applications. NA-110 supports AMD G-Series APU T24L

- Supports Four 10/100/1000Mbps Ethernet ports
- Supports BIOS redirected to COM port features
- Supports one 2.5" SATA2 Hard Disk
- Reasonable computing performance and throughput for processor and LAN ports
- Suitable for Network Appliance; VPN, network bandwidth controller, firewall and UTM

1.3 Specifications

1.3.1 System

- **System CPU**
  - AMD G-Series APU T24L single core (1.0GHz)
- **BIOS**
  - AMI 16Mbit PnP Flash BIOS with function of BIOS redirected to COM port
- **System Memory**
  - One DDR3 1066SODIMM up to 4 GB
- **HDD Interface**
  - One 2.5" SATA2 HDD
  - One CFast
- **Network Interface**
  - Four 10/100/1000Mbps Ethernet (Realtek 8111E)
- **Watchdog Timer**
  - One for system reset: 255 levels,1-255 sec
- **USB**
  - Two USB ports in the rear side
- **Console**
  - RS-232 Console port is the rear side(DB9-type)
- **Power**
  - DC12V 40W adaptor
- **OS Compatibility**
  - Redhat 2.6 Kernel

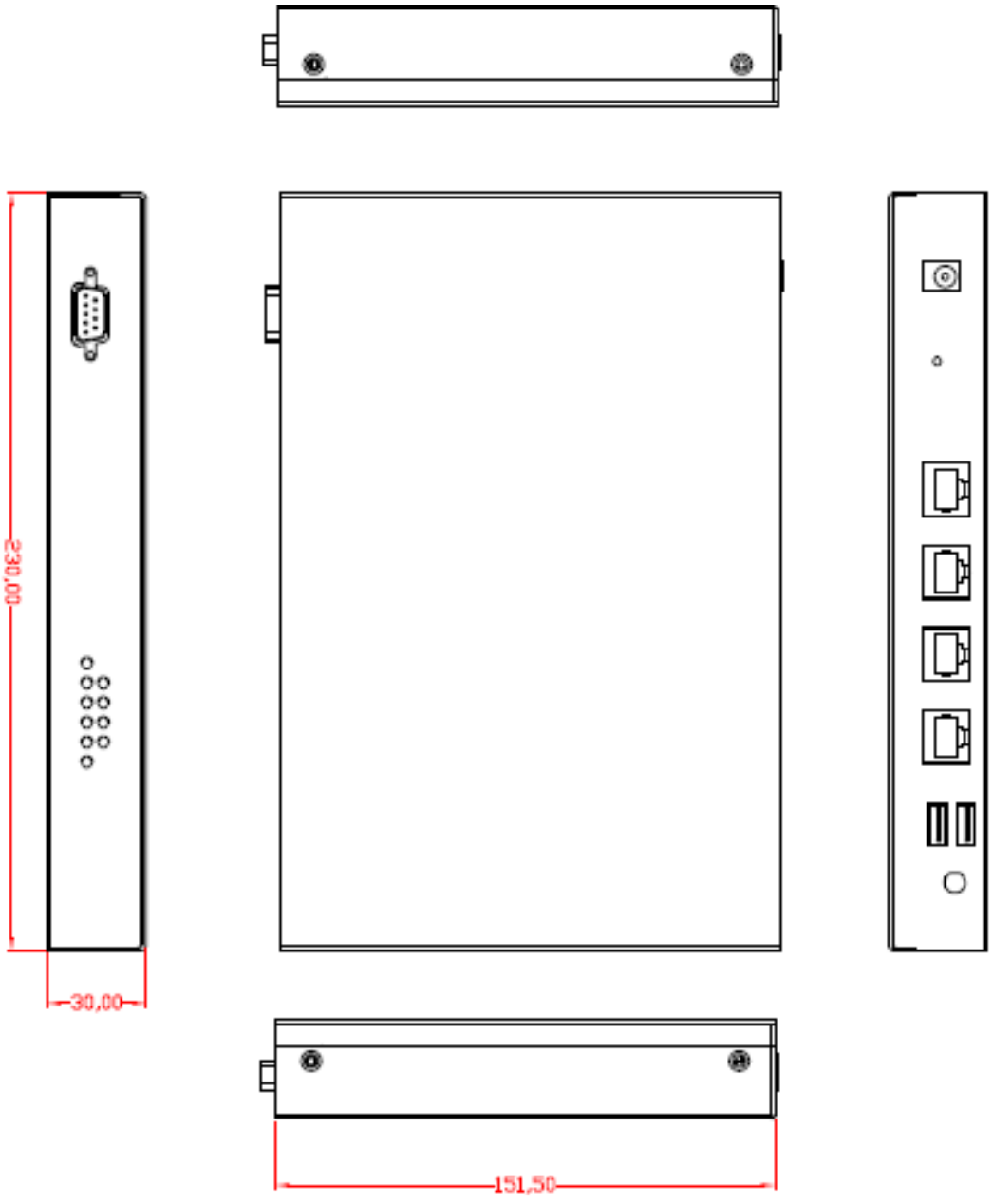
1.3.2 Mechanical / Environmental

- **Form Factor**
  - 1U slim type and fanless solution
- **LED**
  - Power, HDD, Link/Act with transfer rate
  - Programmable LED for optional
- **Operation Temperature**
  - 0°C ~ 40°C (32°F ~ 104°F)
- **Storage Temperature**
  - -20°C ~ 70°C (-4°F ~ 158°F)
- **Humidity**
  - 10% - 95% RH, non-condensing
- **Chassis Material**
  - Steel
- **Dimensions**
  - 30mm (1.18") (H) x 230mm (9.00") (W) x 150mm (5.9") (D)
- **Weight (Net/Gross)**
  - 1.12g / 1.98Kg

NOTE: All specifications and images are subject to change without notice.

1.4 Dimensions and Outlines

NA-110



1.5 I/O Outlets

Locate the front panel I/O outlets on the NA-110 server to connect serial and Ethernet interface devices.

1.5.1 Front Panel for NA-110

- **Programmable LED (for optional)**

  A sample code will be provided that allow users to define their own function.

  The sample codes for the above features can be found in axiomtek website, and they are only for customers' reference as remarked.

- **Power LED**

  It will be lighting when the server is powered on to perform diagnostic tests and check a proper operation.

- **LAN Link LED**

  It will be lighting when a twisted pair is connected to another Ethernet device on the port. It shows network transfer rate while making a connection.

- **Activity LED**

  It will be lighting when the server is transmitting or receiving a packet through the twisted pair ports.

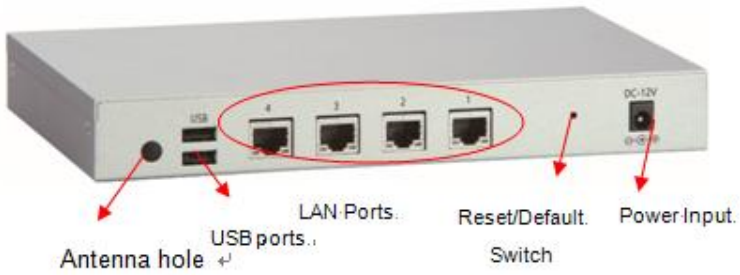
- **HDD LED**

  The LED flashes when transmitting or receiving any signals.

- **Console port**

  RS-232 Console port is for the command of line interface and of diagnostic support by P.O.S.T (Power on Self Test).

1.5.2 Rear Panel for NA-110



- **Reset/Default Switch –** It is for reset the system to reboot your computer instead of turning OFF the power switch. It is a better way to reboot your system for a longer life of the system's power supply.

  The sample code will be provided that allows users to define their own function. For example, when the system has any problems, this switch can support to reset it to the customer's OS default settings if our customer's OS supports this application.

- **Link/Active LED (Single color)for LAN port #1, port#2, port#3, port#4**

  1. The orange LED is on when the LAN port connection is working.
  2. The LED flashes when transmitting or receiving any signals to or from the appliance.
  3. The LED is dark when the appliance is off.

- **Transmitted LED for LAN port #1, port#2, port#3, port#4**

  1. The double-color LED light indicates 10/100/1000Mbps transfer rate.

`Transfer Rate	LED Light Color
10Mbps	Dark
100Mbps	Green
1000Mbps	Amber

  2. When the amber-color LED light is radiating, it should be 1000Mbps transfer rate at this moment.
  3. When the green-color LED light is radiating, it should be 100Mbps transfer rate at this moment
  4. If the LED is dark and Link/Active LED is light on or flashing, it should be 10Mbps transfer rate.
  5. When this LED and Link/Active LED both are dark. No networking devices are attached

MEMO:

CHAPTER 2
HARDWARE DESCRIPTION

The NA-110 is convenient for your various hardware configurations. The chapter 2 will help you get familiar with the hardware.

2.1 Checklist

The package bundled with your NA-110 should contain the following items:

The NA-110 network appliance hardware platform

- DC Power Adapter x 1,Power cord x 1
- Plastic stand for stack–up x 4
- Screws for HDD X2

If you cannot find this package or any items are missing, please contact Axiomtek distributors immediately. If you order any optional components, the package might contain those additional hardware or documents accordingly.

2.2 Memory Module (SODIMM)

The main board supports one DDR3 1066 SODIMM socket. Maximum memory capacity is up to 4GB None-ECC unbuffer memory.

The following steps show you how to install the memory modules:

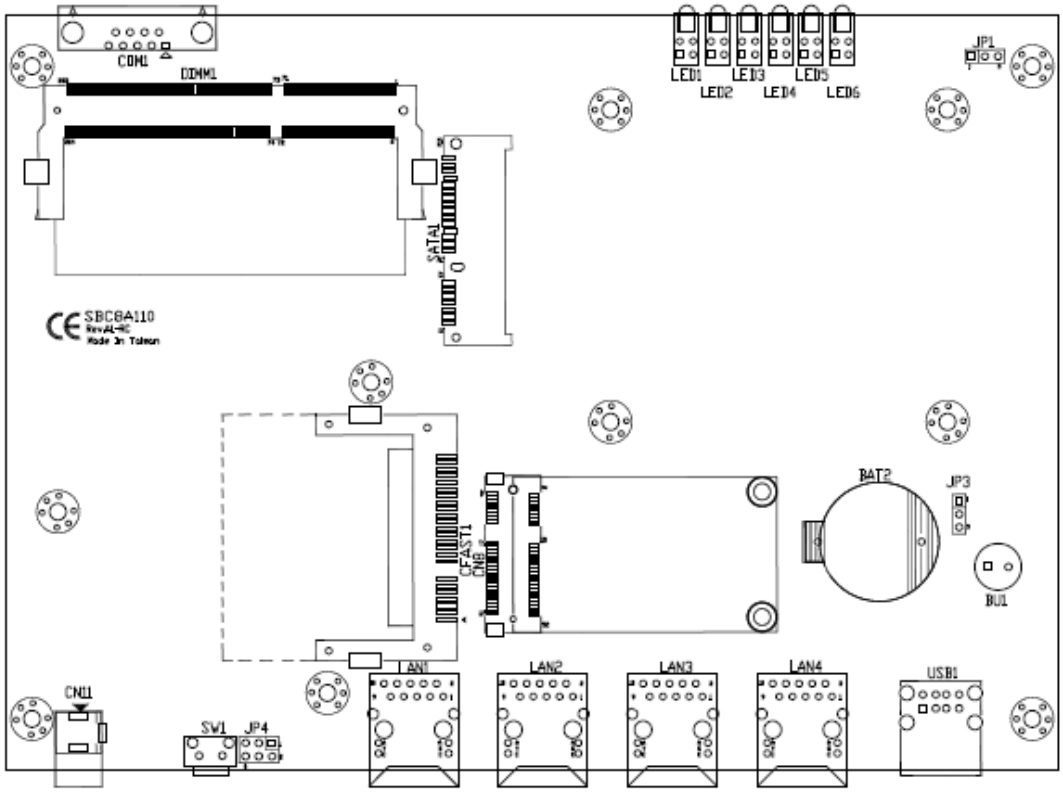
1 Push down each side of the SODIMM socket.

2 Align the memory module with the socket that notches of memory module must match the socket keys for a correct installation.

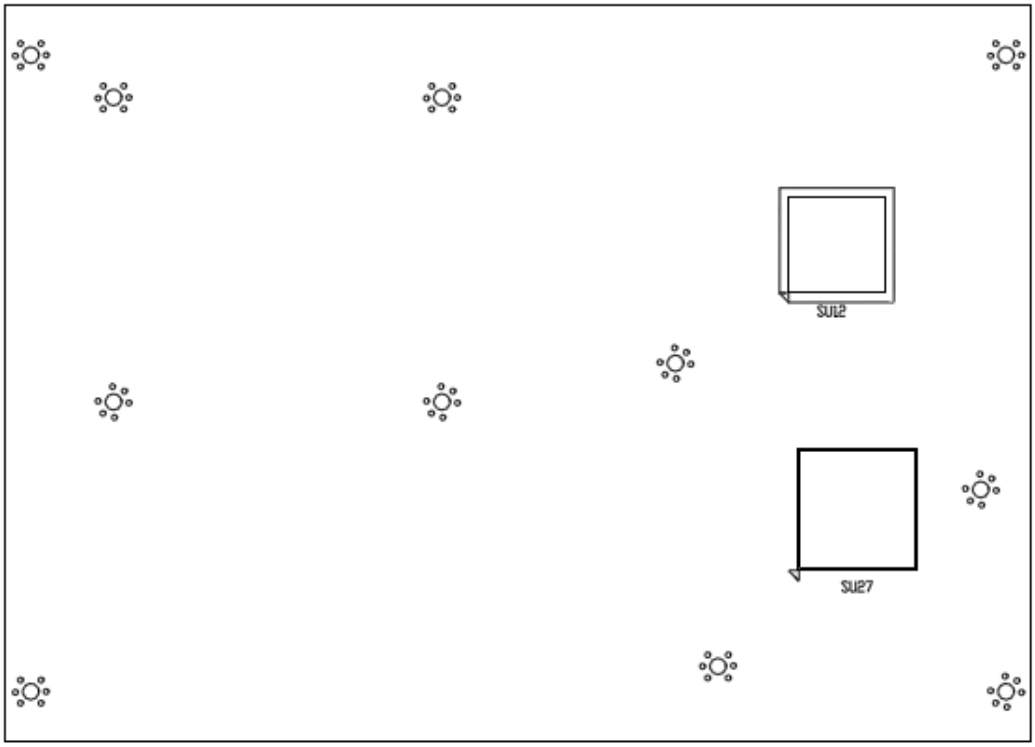
3 Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered upwards and clipped on to the edges of the DIMM.

4 Install any remaining SODIMM modules.

2.3 Board Layout



Top Side



Bottom Side

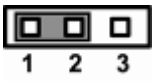
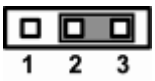
2.4 Jumper Settings

This section provides the information about jumpers and connectors of NA-110. Proper jumper settings configure the main board in this appliance to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

Jumper	Definition	Jumper Settings	Function
JP1	Auto Power Button Mode Selection	Short(1-2)	Auto Power On (Default)
		Short(2-3)	Power on By Power button
JP2	Reserve		
JP3	Clear CMOS Setting	Short (1-2)	Normal(Default)
		Short (2-3)	Clear BIOS CMOS
JP4	TACT SW1 Selection	Short (1-2)	Power On/Off
		Short (3-4)	Reset(Default)
		Short (5-6)	GPI

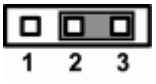
2.4.1 Auto Power Button Jumer (JP1)

If JP1 is enabled for AC power input, the system will be automatically power on without pressing soft power button. If JP1 is disabled for AC power input, it is necessary to manually press soft power button to power on the system.

Description	Function	Jumper Setting
Auto Power Button Mode Selection	Auto Power On (Default)	**JP6** 
	Power on By Power button	**JP6** 

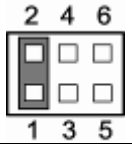
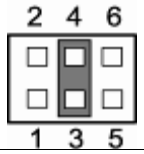
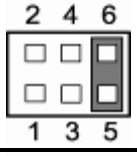
2.4.2 Restore Bios Setting (JP3)

Use this jumper to erase and restore CMOS memory and BIOS setting. Put jumper clip to pin 2-3 for a few seconds then move it back to pin 1-2, by doing this procedure CMOS data resets to its safe default settings.

Description	Function	Jumper Setting
CMOS Clear	Normal (Default)	JP3
	Clear CMOS	JP3 

2.4.3 SW1 Function Select (JP4)

Use this jumper to select the TACT SW1 Function.

Description	Function	Jumper Setting
TACT SW1 Function Selection	Power On/Off	JP4 
	Reset (Default)	JP4 
	GPIO	JP4 

2.5 Connectors

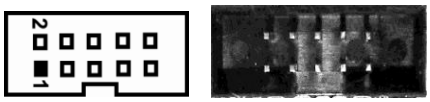
Connectors connect the board with other parts of the system. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected. Here is a summary table shows you all connectors on the main board.

Connectors	Label
SMBus Connector(optional)	CN1
DIO Connector(optional)	CN2
COM2 Connector(optional)	CN3
COM1 Connector(Box Header for optional)	CN4
COM1 Connector (DB9)	COM1
LCM Connector(optional)	CN5
SATA Power Connector(optional)	CN6
PS/2 Connector(optional)	CN7
Mini Card Connector	CN8
Front Panel Connector	CN9
DC Power Jack	CN11
On Board SATA Connector	SATA1
SATA Connector(optional)	SATA2
USB2,3(optional)	USB1
USB0,1	USB2
Ethernet Connector1	LAN1
Ethernet Connector2	LAN2
Ethernet Connector3	LAN3
Ethernet Connector4	LAN4

2.5.1 COM2 Connector (CN3) for optional

The pin assignments are listed on the following table.

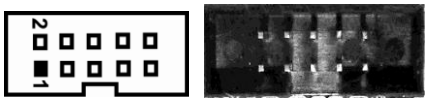
Pin	Signal	Pin	Signal
1	DCD2	2	DSR2
3	RXD2	4	RTS2
5	TXD2	6	CTS2
7	DTR2	8	RI2
9	GND	10	N.C.



2.5.2 COM1 Connector (CN4) for optional

The pin assignments are listed on the following table.

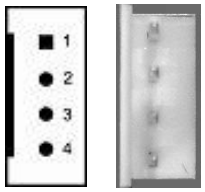
Pin	Signal	Pin	Signal
1	DCD1	2	DSR1
3	RXD1	4	RTS1
5	TXD1	6	CTS1
7	DTR1	8	RI1
9	GND	10	N.C.



2.5.3 SATA Power Output Connector (CN6) for optional

Use CN6 for connecting to SATA 2.5" HDD power supply.

Pin	Signal
1	+12V level
2	GND
3	GND
4	+5V level

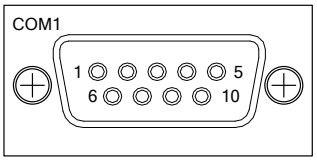


2.5.4 Serial Port1 Connector (COM1)

The COM1 Port connector is a standard DB-9 connector.

Pin	Signal
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator

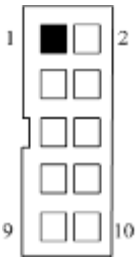
COM1



2.5.5 PS/2 Connector (CN7) for optional

The board supports a keyboard and Mouse interface. Connector CN7 is for PS/2 keyboard Connection VIA "Y" Cable.

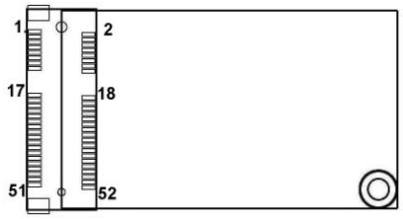
Pin	Signal	Pin	Signal
1	VCC	2	KBDATA
3	KBCLK	4	GND
5	VCC	6	VCC
7	MSDATA	8	MSCLK
9	GND	10	NC



2.5.6 PCI-Express Mini Card Connector (CN8)

CN6 is a PCI-Express Mini Card connector which supports a PCI-Express x1 link and a USB 2.0 link. A PCI-Express Mini Card can be applied to either PCI-Express or USB 2.0. It complies with PCI-Express Mini Card spec v1.2.

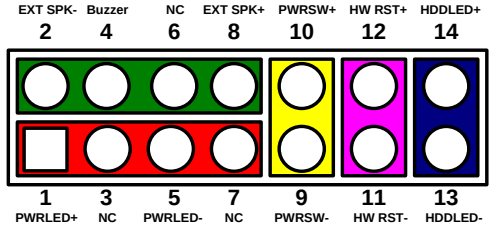
Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	GND
5	No use	6	+1.5V
7	CLKREQ#	8	No use
9	GND	10	No use
11	REFCLK-	12	No use
13	REFCLK+	14	No use
15	GND	16	No use
17	No use	18	GND
19	No use	20	W_DISABLE#
21	GND	22	PERST#
23	PE_RXN3	24	+3.3VSB
25	PE_RXP3	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PE_TXN3	32	SMB_DATA
33	PE_TXP3	34	GND
35	GND	36	USB_D8-
37	GND	38	USB_D8+
39	+3.3VSB	40	GND
41	+3.3VSB	42	No use
43	GND	44	No use
45	No use	46	No use
47	No use	48	+1.5V
49	No use	50	GND
51	No use	52	+3.3VSB

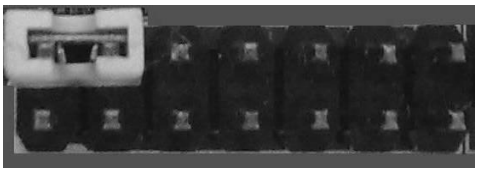


Front

2.5.7 Panel Connector (CN9)

Pin	Signal
1	PWRLED+
2	EXT SPK-
3	N.C.
4	Buzzer
5	PWRLED-
6	N.C.
7	N.C.
8	EXT SPK+
9	PWRSW-
10	PWRSW+
11	HW RST-
12	HW RST+
13	HDDLED-
14	HDDLED+





- **Power LED**

  Pin 1 connects anode (+) of LED and pin 5 connects cathode (-) of LED. The power LED lights up when the system is powered on.

- **External Speaker and Internal Buzzer**

  Pin 2, 4, 6 and 8 connect the case-mounted speaker unit or internal buzzer. While connecting the CPU card to an internal buzzer, please set pin 2 and 4 closed; while connecting to an external speaker, you need to set pins 2 and 4 opened and connect the speaker cable to pin 8(+) and pin 2(-).

- **ATX Power On/Off Button**

  Pin 9 and 10 connect the ATX power button on front panel to the CPU card, which allows users to turn on or off ATX power supply.

- **System Reset Switch**

  Pin 11 and 12 connect the case-mounted reset switch that reboots your computer without turning off the power switch. It is a better way to reboot your system for a longer life of system power supply.

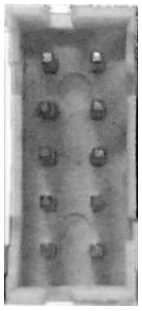
- **HDD Activity LED**

  This connection is linked to hard drive activity LED on the control panel. LED flashes when HDD is being accessed. Pin 13 and 14 connect the hard disk drive to the front panel HDD LED, pin 13 is assigned as cathode(-) and pin 14 is assigned as anode(+).

2.5.8 USB Connectors (USB1) for optional

The 2x5 pin wafers are Universal Serial Bus (USB) connector. They are for installing versatile USB interface peripherals. The USB1 is designed with +5V level standby power which can provide power when system is in suspend mode.

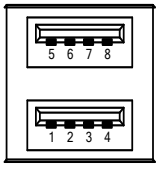
Pin	USB Port 2	Pin	USB Port 3
1	USB VCC (+5V level standby power)	2	USB VCC (+5V level standby power)
3	USB #2_D-	4	USB #3_D-
5	USB #2_D+	6	USB #3_D+
7	GND	8	GND
9	GND	10	GND

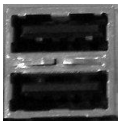


2.5.9 USB Connectors(USB2)

The board features Universal Serial Bus (USB) connectors, compliant with USB 2.0 (480Mbps) that can be adapted to any USB peripherals, such as monitor, keyboard and mouse. This USB2 connector carries USB port 0 and 1.

Pin	USB Port 0	Pin	USB Port 1
1	USB VCC (+5V level)	5	USB VCC (+5V level)
2	USB #0_D-	6	USB #1_D-
3	USB #0_D+	7	USB #1_D+
4	GND	8	GND

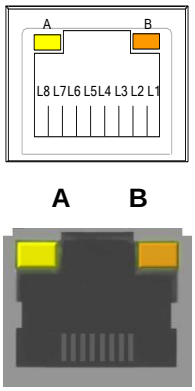




2.5.10 Ethernet Ports (LAN1, LAN2, LAN3 and LAN4)

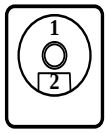
Ethernet ports are RJ-45 connectors. Connection can be established by plugging one end of the ethernet cable into LAN1/LAN2/LAN3/LAN4 and the other end (phone jack) to a 1000/100/10-Base-T hub.

Pin	Signal	Pin	Signal
L1	MDI0+	L5	MDI2+
L2	MDI0-	L6	MDI2-
L3	MDI1+	L7	MDI3+
L4	MDI1-	L8	MDI3-
A	Active LED (Yellow)		
B	100 LAN LED (Green) / 1000 LAN LED (Orange)		



2.5.11 DC-In Power Jack (CN11)

Pin	Signal
1	+12V
2	GND



MEMO:

CHAPTER 3
AMI BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMI BIOS BIOS setup utility.

3.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press the <Del> key immediately.
2. After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

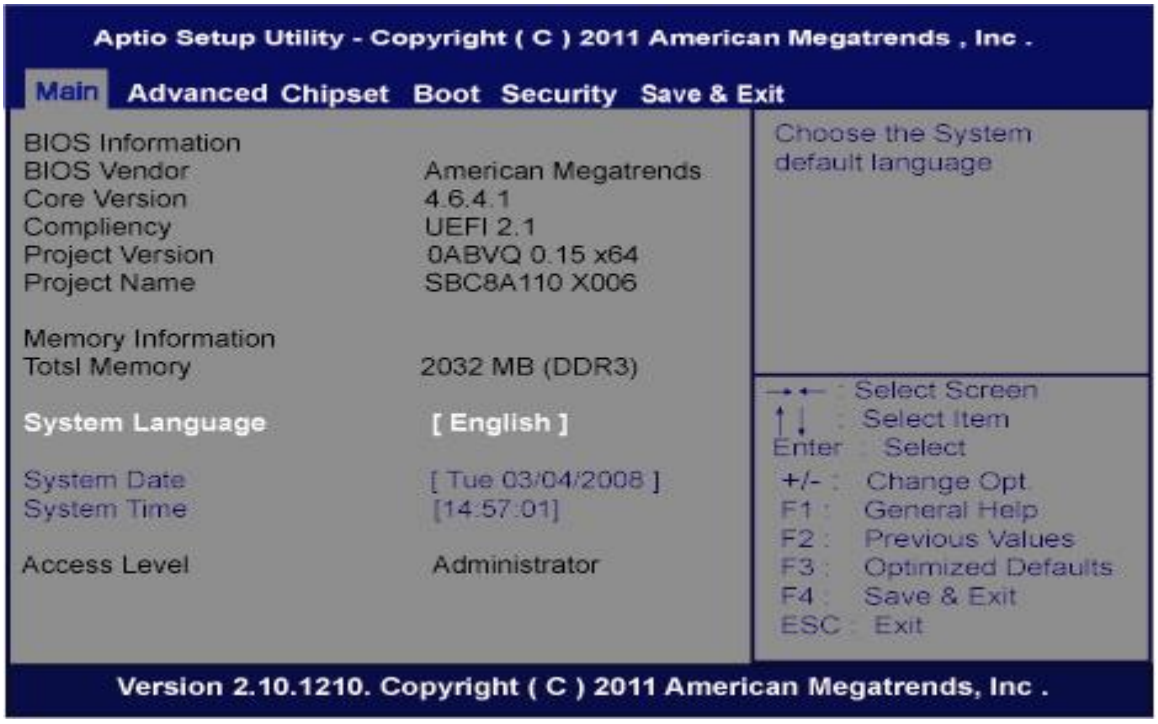
These keys include <F1>, <F2>,<F3>, <F4>, <Enter>, <ESC>, keys, and so on.

Note: Some of navigation keys differ from one screen to another.

Hot Keys	Description
→← **Left/Right**	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ **Up/Down**	The Up and Down <Arrow> keys allow you to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
Tab	The <Tab> key allows you to select setup fields.
F1	The <F1> key allows you to display the General Help screen.
F2	The <F2> key allows you to Load Previous Values.
F3	The <F3> key allows you to Load Optimized Defaults.
F4	The <F4> key allows you to save any changes you have made and exit Setup. Press the <F4> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub- screens.

3.3 Main Menu

When you first enter the Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.4.1
Compliency UEFI 2.1
Project Version 0ABVQ 0.15 x64
Project Name SBC8A110 X006
Memory Information
Totsl Memory 2032 MB (DDR3)
System Language [English]
System Date [Tue 03/04/2008]
System Time [14:57:01]
Access Level Administrator
Choose the System default language
: Select Screen
: Select Item
Enter : Select
+/- : Change Opt
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.10.1210. Copyright (C) 2011 American Megatrends, Inc .

- **System Time/Date**

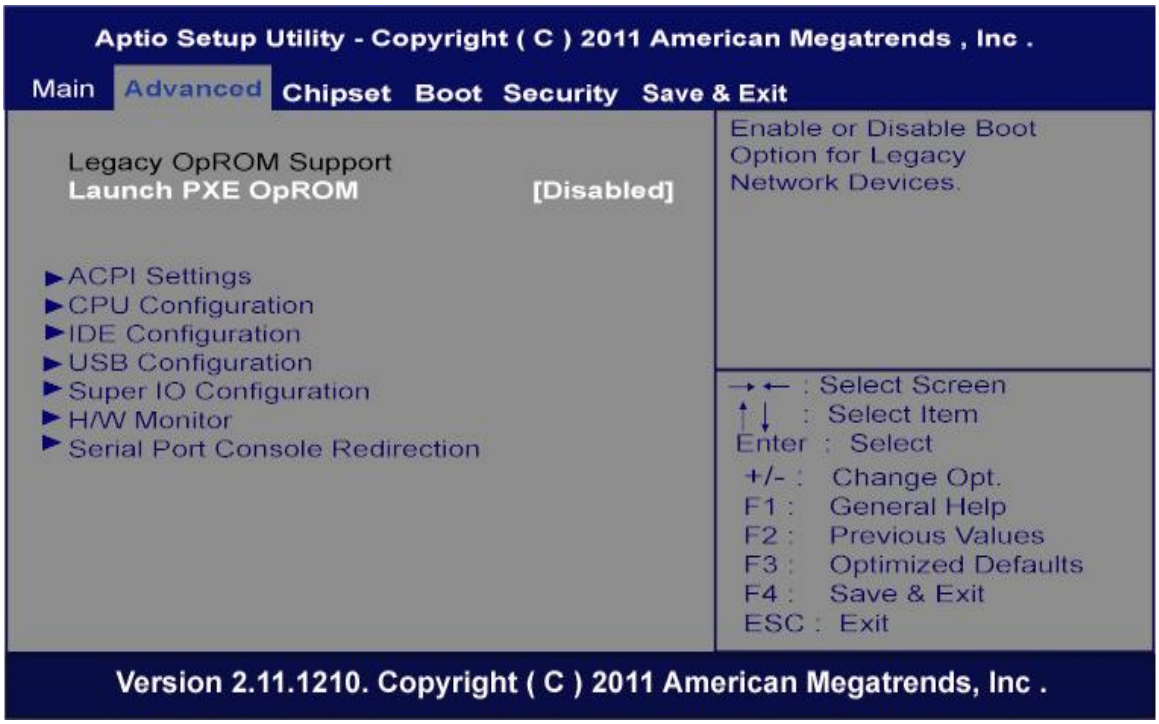
  Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

3.4 Advanced Menu

The Advanced menu allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

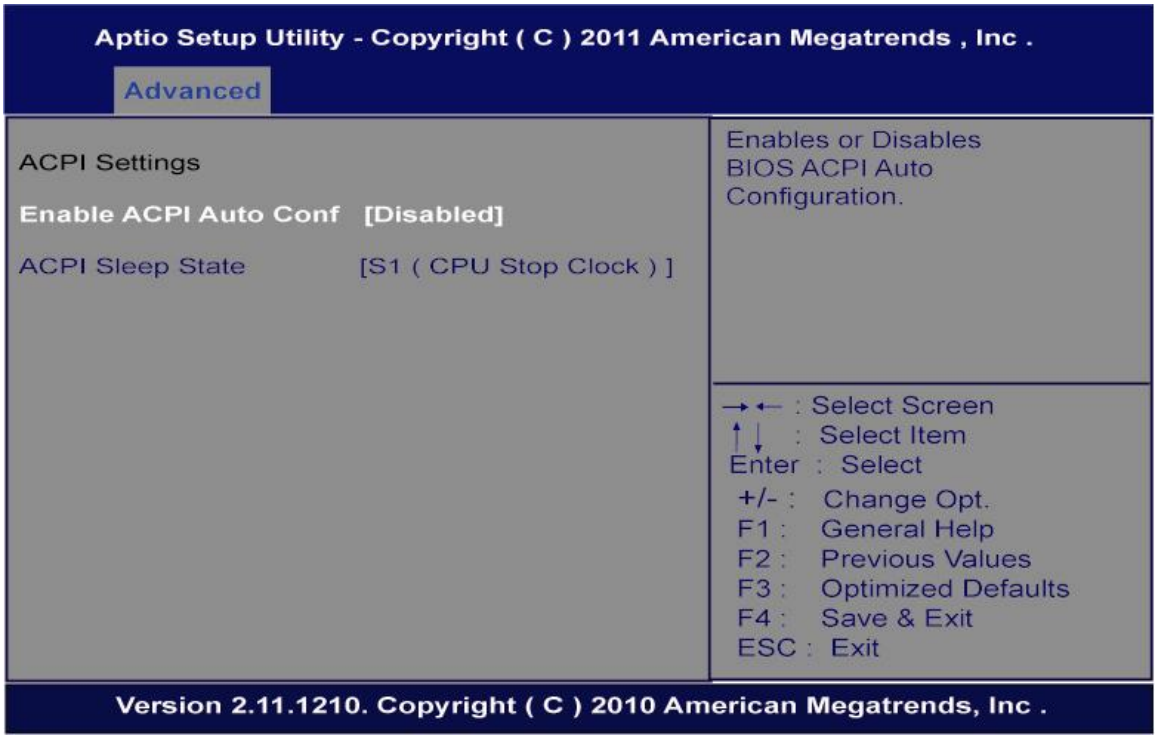
- ACPI Settings
- CPU Configuration
- IDE Configuration
- USB Configuration
- Super I/O Configuration
- H/W Monitor
- Serial Port Console Redirection

For items marked with "►", please press <Enter> for more options.



- **ACPI Settings**

You can use this screen to select options for the ACPI Settings, and change the value of the selected option. A description of the selected item appears on the right side of the screen.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Advanced
ACPI Settings
Enable ACPI Auto Conf [Disabled]
ACPI Sleep State [S1 (CPU Stop Clock)]
Enables or Disables BIOS ACPI Auto Configuration.
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2010 American Megatrends, Inc .

- **Enable ACPI Auto Configuration**

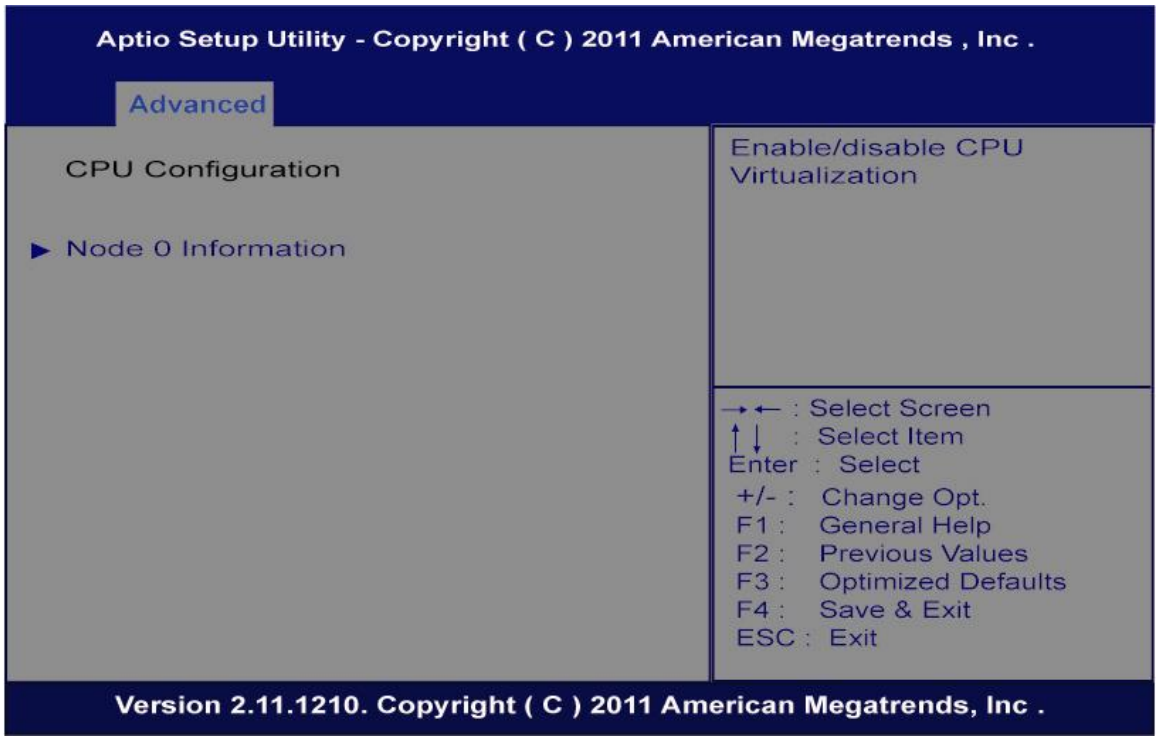
  Use this item to enable or disable BIOS ACPI auto configuration.

- **ACPI Sleep State**

  Default Advanced Configuration and Power Interface (ACPI) sleep state to be S1 (CPU Stop Clock).

- **CPU Configuration**

This screen shows the CPU Configuration, and you can change the value of the selected option.

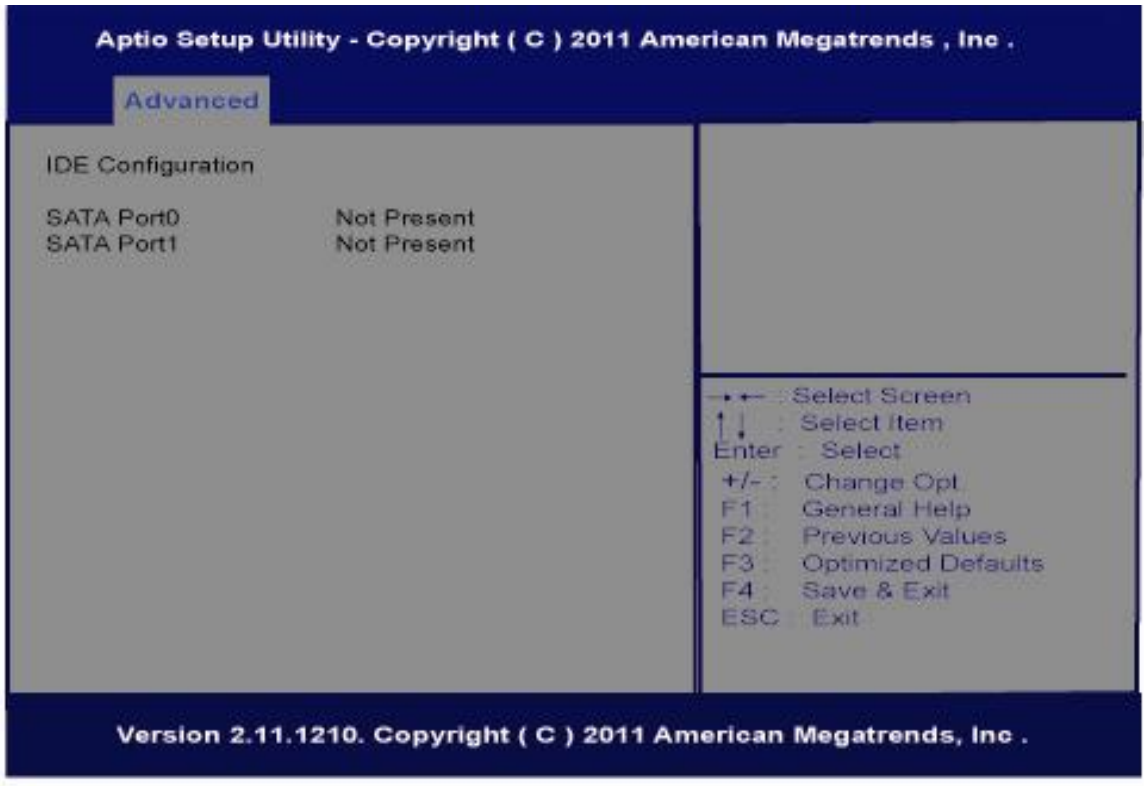

Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Advanced
CPU Configuration
Node 0 Information
Enable/disable CPU Virtualization
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Node 0 Information**

  View memory information related to Node 0.

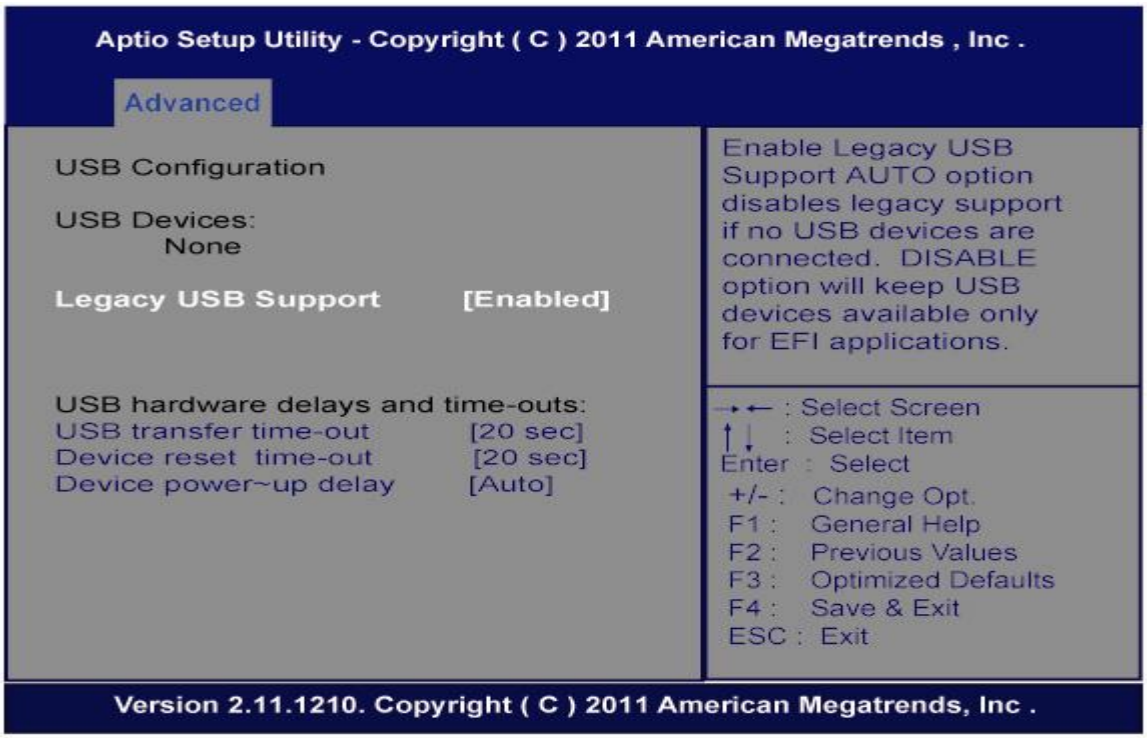
- **IDE Configuration**

You can use this screen to select options for the IDE Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with "▶", please press <Enter> for more options.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Advanced
IDE Configuration
SATA Port0 Not Present
SATA Port1 Not Present
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **USB Configuration**

You can use this screen to select options for the USB Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with "►", please press <Enter> for more options.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Advanced
USB Configuration
USB Devices:
None
Legacy USB Support [Enabled]
USB hardware delays and time-outs:
USB transfer time-out [20 sec]
Device reset time-out [20 sec]
Device power~up delay [Auto]
Enable Legacy USB Support AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Legacy USB Support**

  Use this item to enable or disable support for USB device on legacy operating system. The default setting is Enabled. Auto option disables legacy support if no USB devices are connected. Disable option will keep USB devices available only for EFI applications.

- **USB transfer time-out**

  The time-out value for control, bulk and interrupt transfers.

- **Device reset time-out**

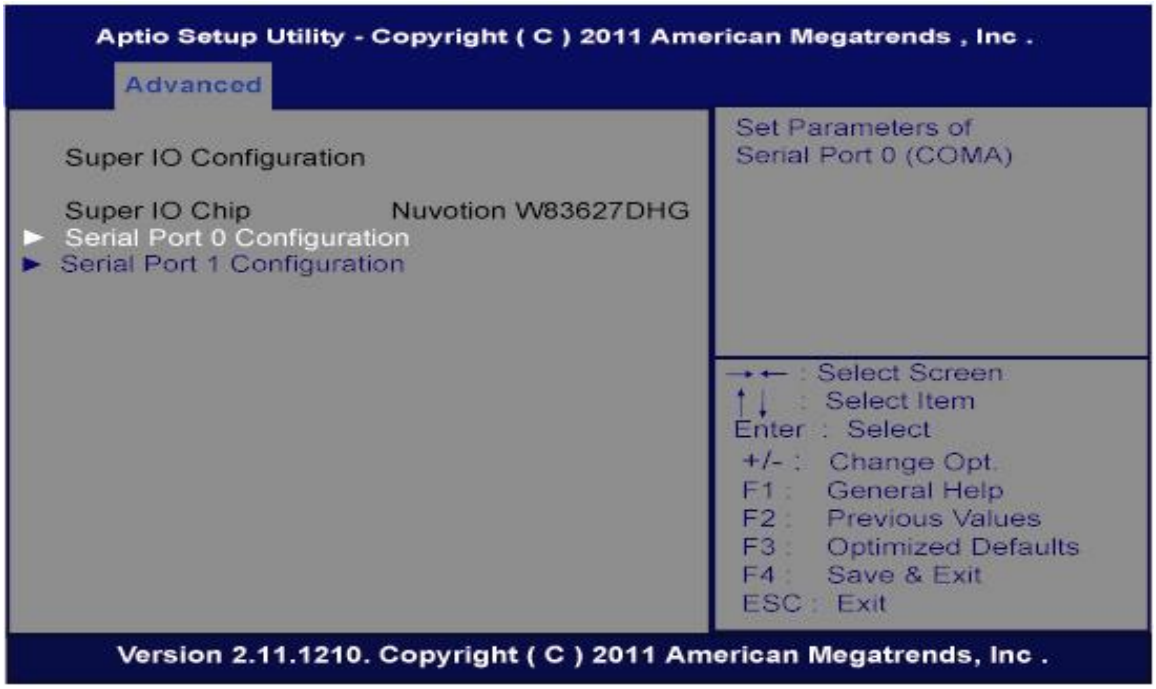
  USB mass storage device start unit command time-out.

- **Device power-up delay**

  Maximum time the device will take before it properly reports itself to the host controller. Auto option uses default value: for a root port it is 100ms, for a hub port the delay is taken from hub descriptor.

- **Super IO Configuration**

You can use this screen to select options for the Super IO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Advanced
Super IO Configuration
Super IO Chip Nuvotion W83627DHG
► Serial Port 0 Configuration
► Serial Port 1 Configuration
Set Parameters of
Serial Port 0 (COMA)
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Serial Port0 Address**

  This option specifies the base I/O port address and Default setting is 3F8.

  Here are the options for your selection, Disabled.

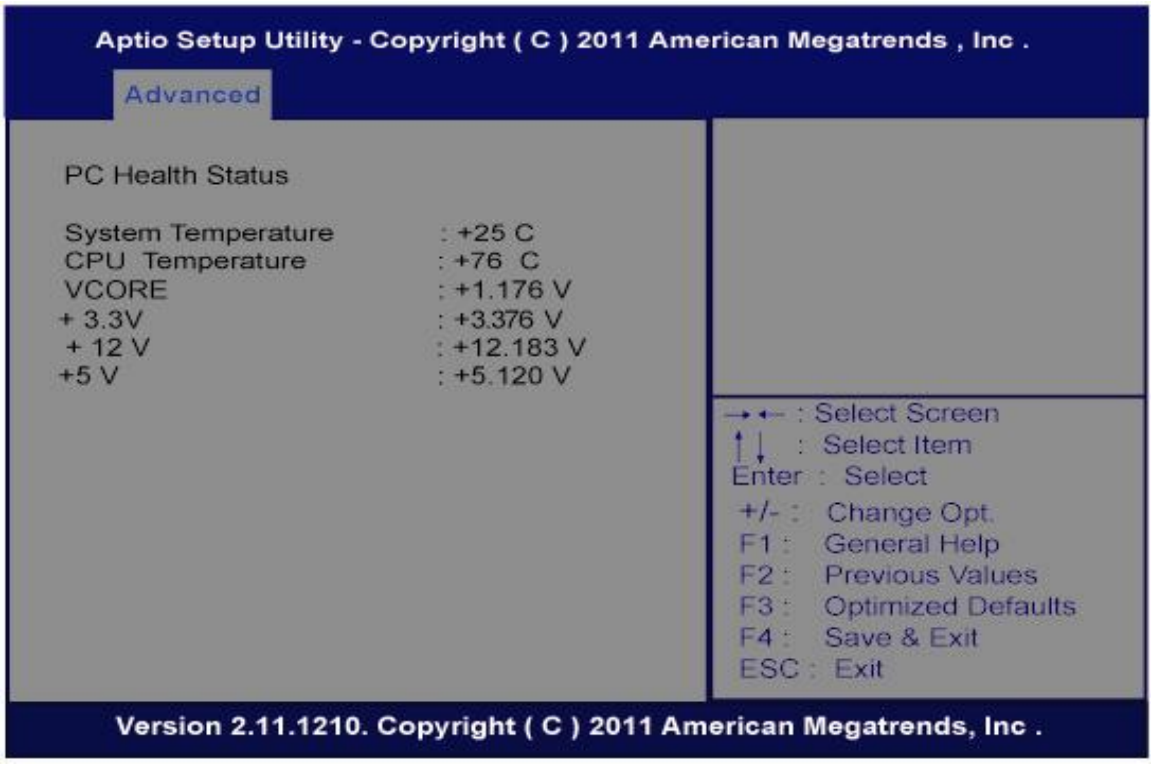
- **Serial Port1 Address**

  This option specifies the base I/O port address and Default setting is 2F8.

  Here are the options for your selection, Disabled.

- **PC Health Status**

This screen shows the Hardware Health Configuration, and a description of the selected item appears on the right side of the screen


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Advanced
PC Health Status
System Temperature : +25 C
CPU Temperature : +76 C
VCORE : +1.176 V
+ 3.3V : +3.376 V
+ 12 V : +12.183 V
+5 V : +5.120 V
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **System Temperature**

  Show you the current system temperature.

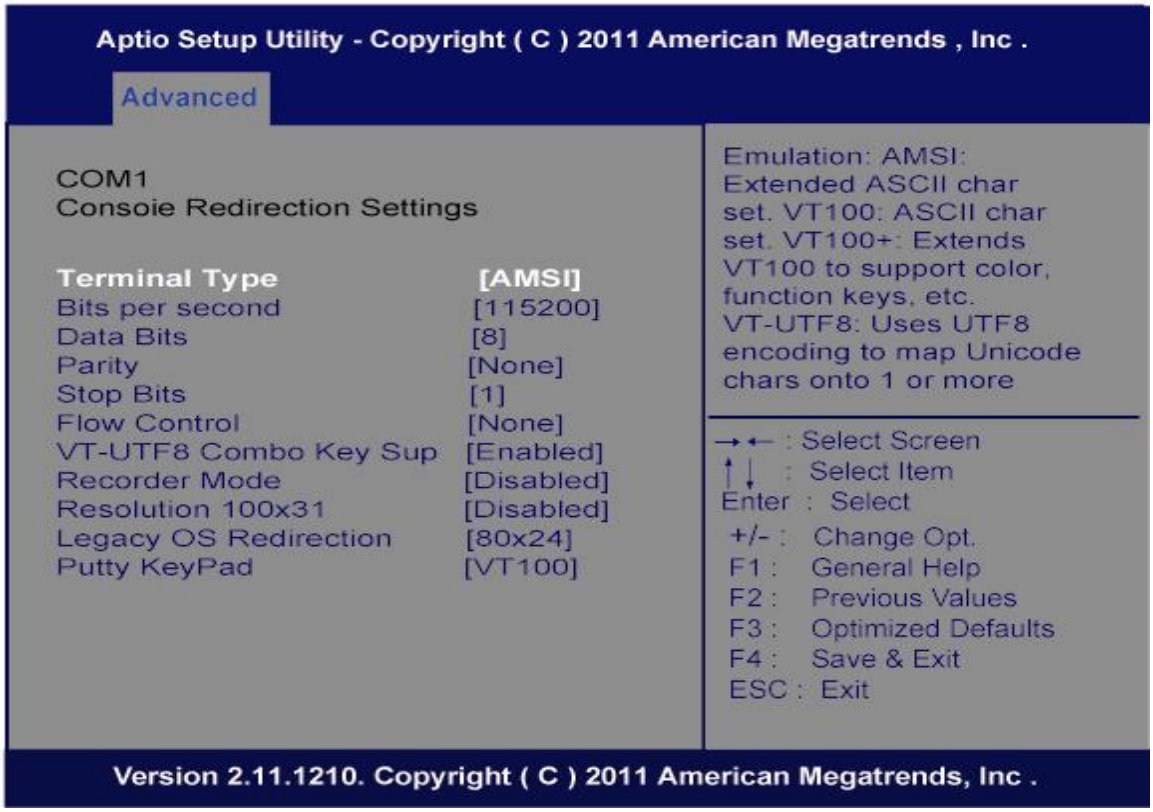
- **CPU Temperature**

  These read-only fields show the functions of the hardware thermal sensor by CPU thermal diode that monitors the chip blocks to ensure a stable system.

- **Vcore 12V / 5V / 3.3V**

  Show you the voltage of 12V / 5V / 3.3V and etc.

- **Serial Port Console Redirection**

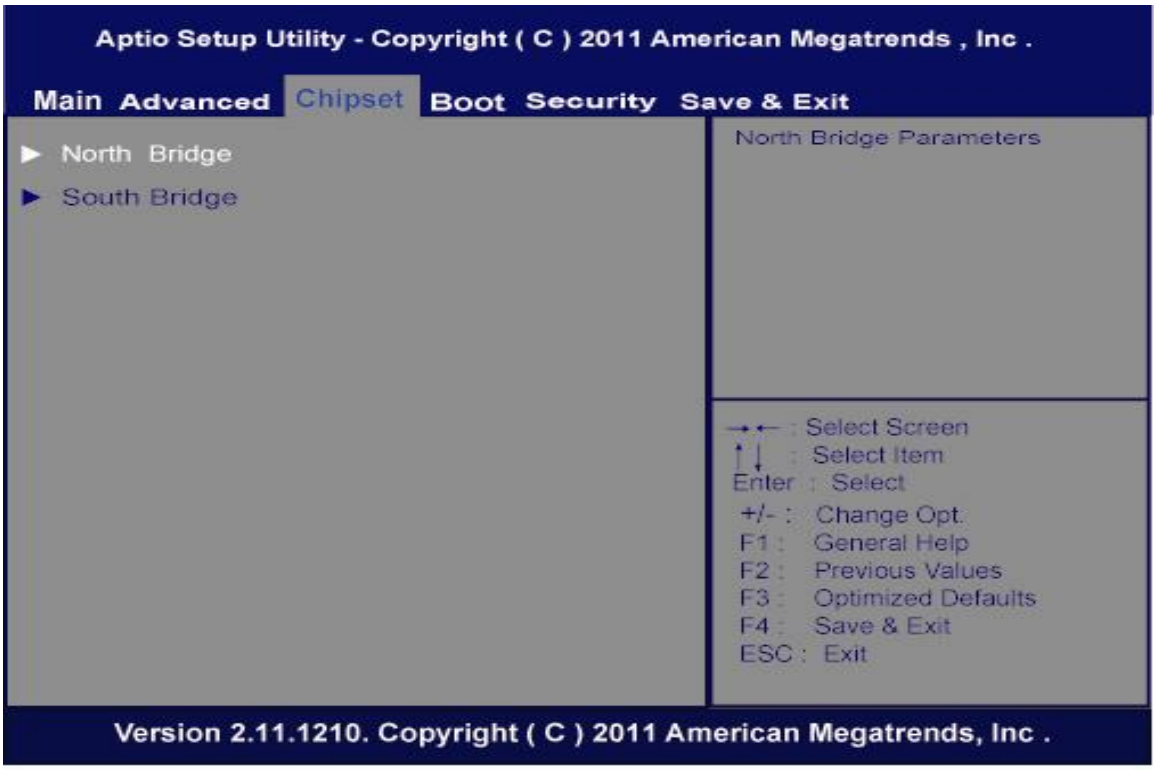

Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Advanced
COM1
Console Redirection Settings
Terminal Type [AMSI]
Bits per second [115200]
Data Bits [8]
Parity [None]
Stop Bits [1]
Flow Control [None]
VT-UTF8 Combo Key Sup [Enabled]
Recorder Mode [Disabled]
Resolution 100x31 [Disabled]
Legacy OS Redirection [80x24]
Putty KeyPad [VT100]
Emulation: AMSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

3.5 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

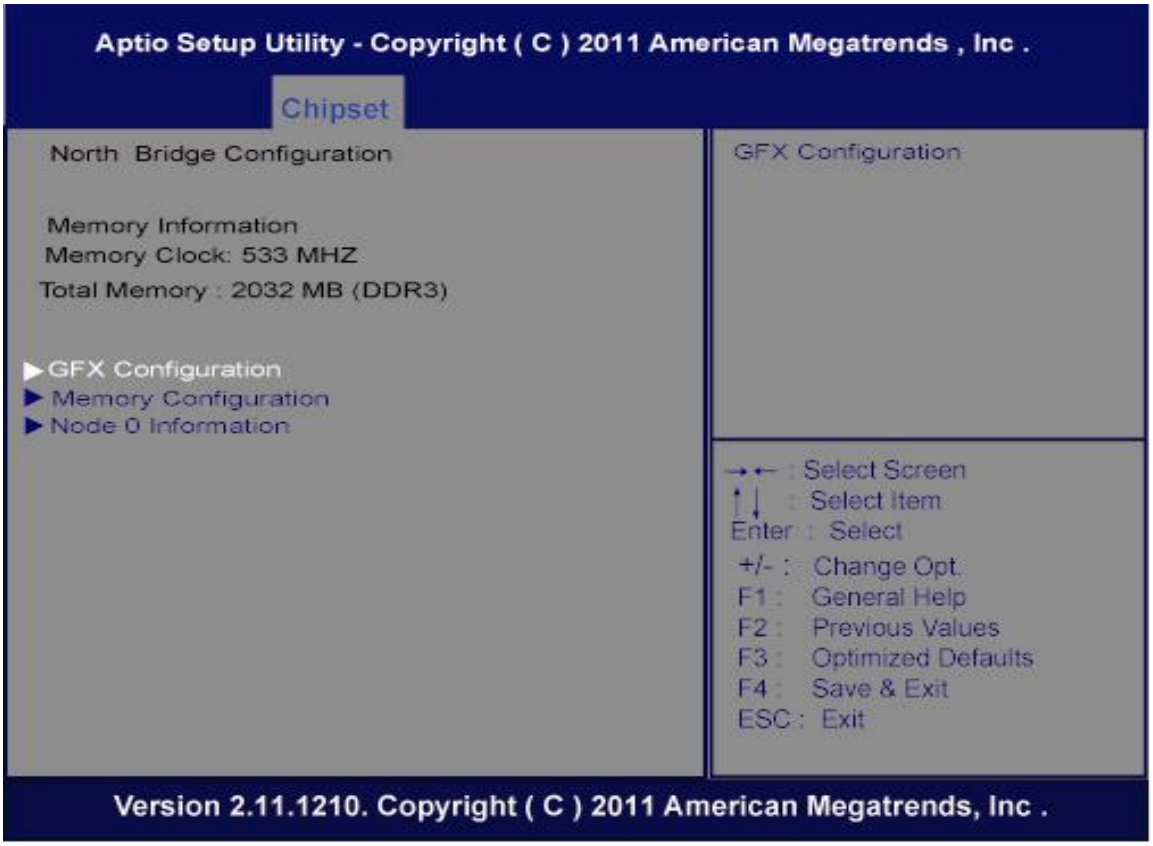
- ► North Bridge
- ► South Bridge

For items marked with "►", please press <Enter> for more options.

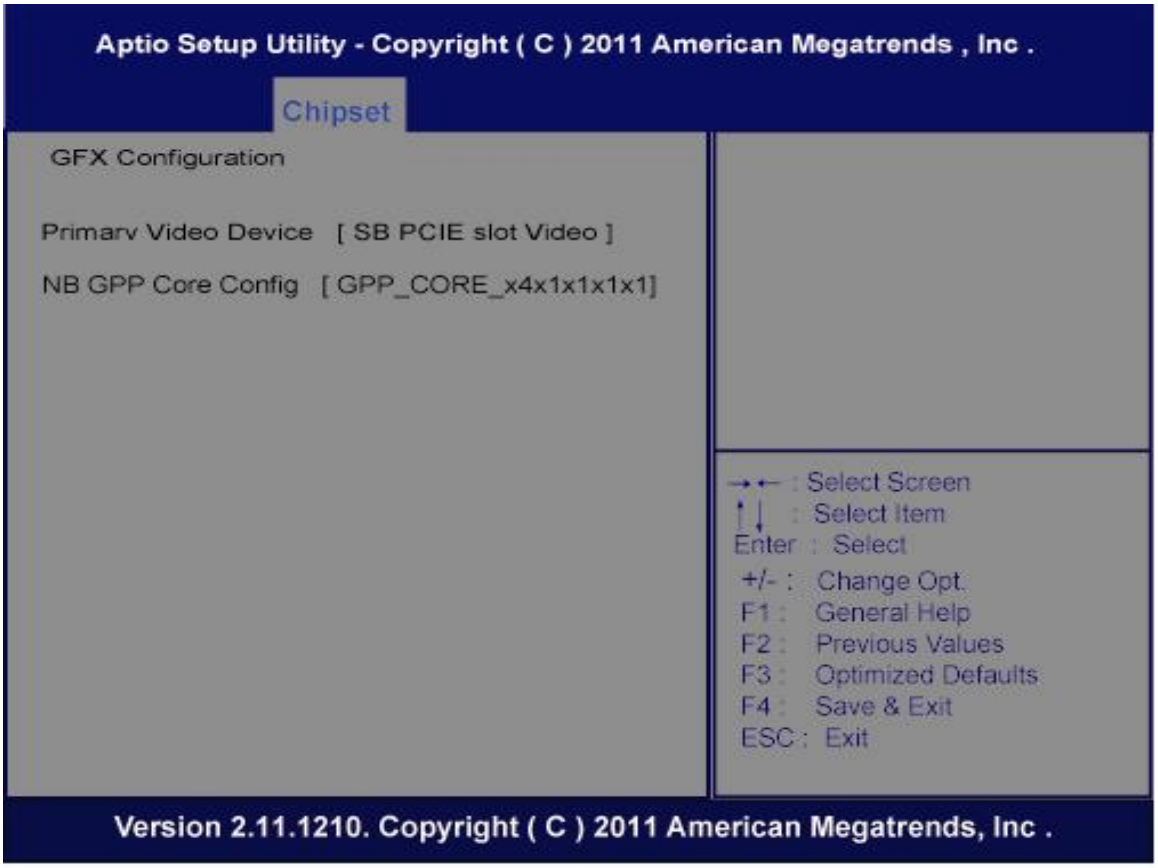

Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Main Advanced Chipset Boot Security Save & Exit
► North Bridge
► South Bridge
North Bridge Parameters
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **NorthBridgeConfiguration**

This screen allows users to configure parameters of North Bridge chipset.

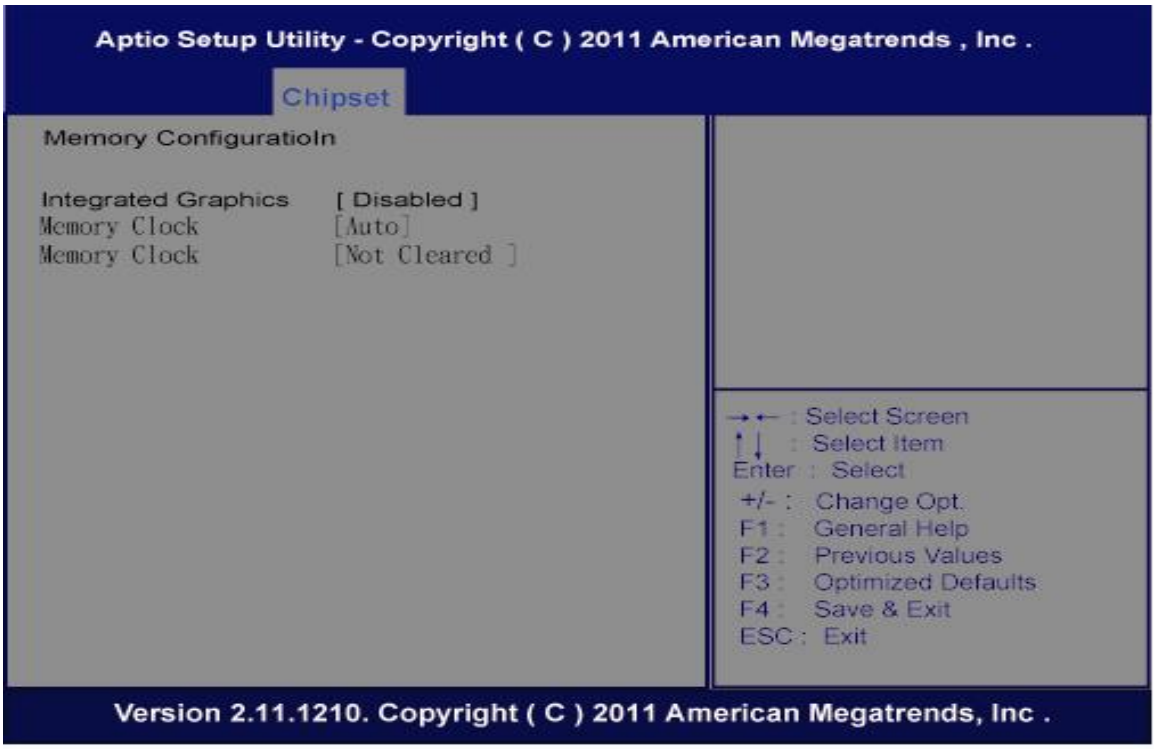

Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Chipset
North Bridge Configuration
Memory Information
Memory Clock: 533 MHZ
Total Memory : 2032 MB (DDR3)
▶ GFX Configuration
▶ Memory Configuration
▶ Node 0 Information
GFX Configuration
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Gfx**


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Chipset
GFX Configuration
Primary Video Device [SB PCIE slot Video]
NB GPP Core Config [GPP_CORE_x4x1x1x1x1]
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Memory Configuration**

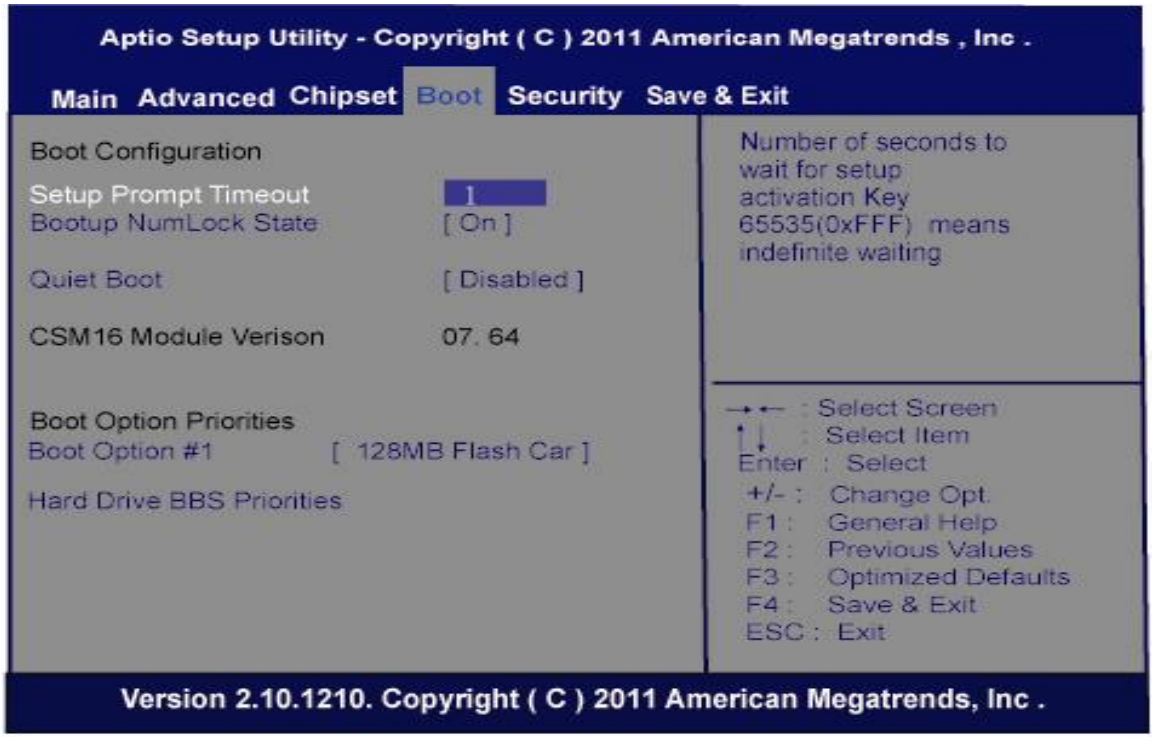
All of options are set Auto as default.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Chipset
Memory ConfiguratioIn
Integrated Graphics [Disabled]
Memory Clock [Auto]
Memory Clock [Not Cleared]
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

3.6 Boot Menu

The Boot menu allows users to change boot options of the system. You can select any of the items in the left frame of the screen to go to the sub menus:

For items marked with "►", please press <Enter> for more options.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Main Advanced Chipset Boot Security Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup NumLock State [On]
Quiet Boot [Disabled]
CSM16 Module Verison 07. 64
Boot Option Priorities
Boot Option #1 [128MB Flash Car]
Hard Drive BBS Priorities
Number of seconds to wait for setup activation Key 65535(0xFFF) means indefinite waiting
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.10.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Setup Prompt Timeout**

  Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

- **Bootup NumLock State**
  Use this item to select the power-on state for the NumLock.

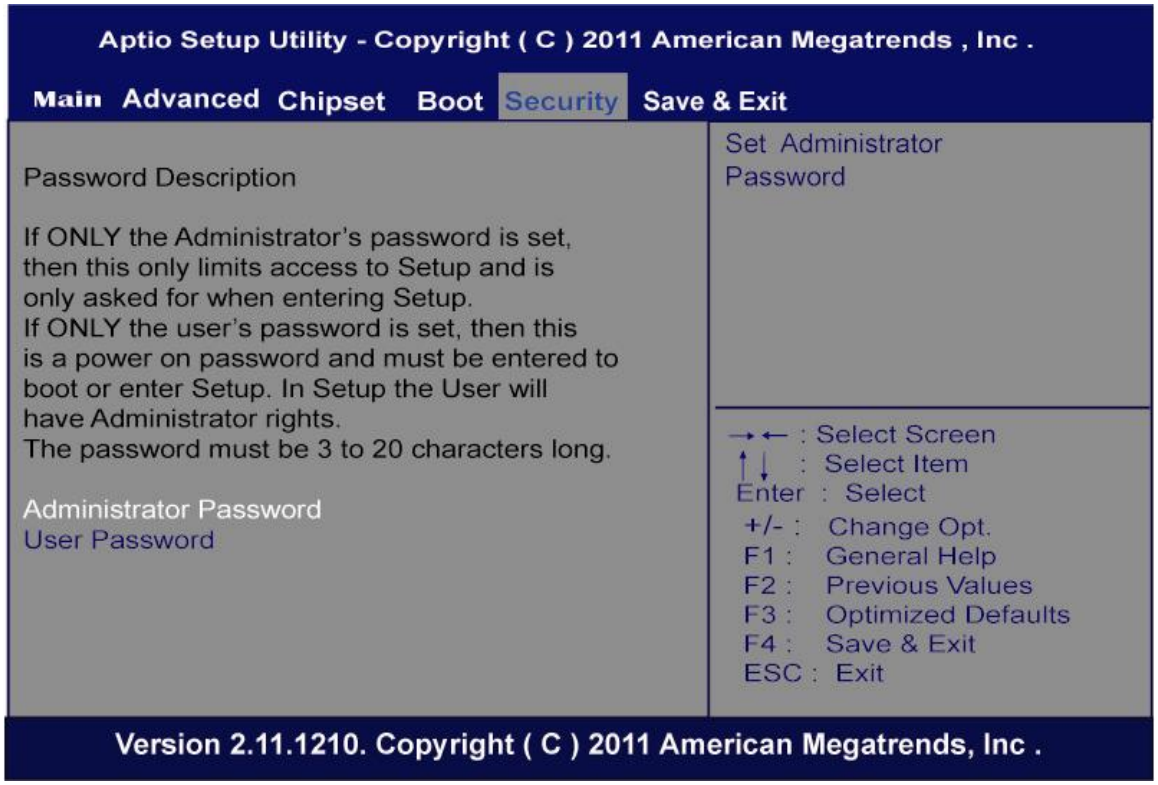
- **Quiet Boot**
  Enable or disable quiet boot option.

- **Boot Option Priorities**

  Set the system boot priority order.

3.7 Security Menu

The Security menu allows users to change the security settings for the system.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Main Advanced Chipset Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the user's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password must be 3 to 20 characters long.
Administrator Password
User Password
Set Administrator Password
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Administrator Password**

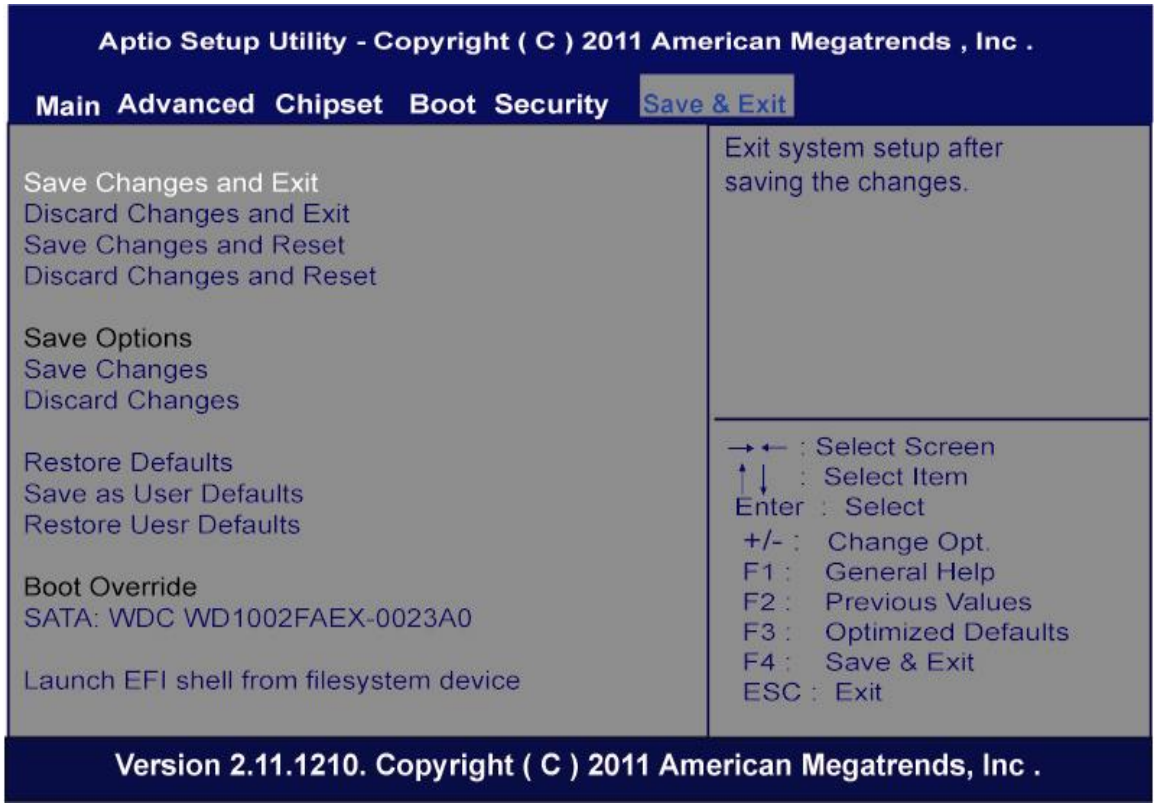
  This item indicates whether an administrator password has been set (installed or uninstalled).

- **User Password**

  This item indicates whether an user password has been set (installed or uninstalled).

3.8 Exit Menu

The Exit menu allows users to load your system configuration with optimal or failsafe default values.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends , Inc .
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset
Save Options
Save Changes
Discard Changes
Restore Defaults
Save as User Defaults
Restore Uesr Defaults
Boot Override
SATA: WDC WD1002FAEX-0023A0
Launch EFI shell from filesystem device
Exit system setup after saving the changes.
→← : Select Screen
↑↓ : Select Item
Enter : Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc .

- **Save Changes and Exit**

  When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>. Select Ok to save changes and exit.

- **Discard Changes and Exit**

  Select this option to quit Setup without making any permanent changes to the system configuration. Select Discard Changes and Exit from the Exit menu and press <Enter>. Select Ok to discard changes and exit.

- **Discard Changes**

  Use this item to abandon all changes.

- **Load Optimal Defaults**

  It automatically sets all Setup options to a complete set of default settings when you select this option. The Optimal settings are designed for maximum system performance, but may not work best for all computer applications. In particular, do not use the Optimal Setup options if your computer is experiencing system configuration problems. Select Load Optimal Defaults from the Exit menu and press <Enter>.

- **Load Fail-Safe Defaults**

  It automatically sets all Setup options to a complete set of default settings when you select this option. The Fail-Safe settings are designed for maximum system stability, but not maximum performance. Select the Fail-Safe Setup options if your computer is experiencing system configuration problems. Select Load Fail-Safe Defaults from the Exit menu and press <Enter>. Select Ok to load Fail-Safe defaults.

MEMO:

APPENDIX A
WDT TIMER FOR SYSTEM RESET

- **Watchdog Timer Setting**

After the system stops working for a while, it can be auto-reset by the Watchdog Timer. The integrated Watchdog Timer can be set up in the system reset mode by program.

The sample codes for the above features can be found in axiomtek website, and they are only for customers' reference as remarked.

- **Using the Watchdog Function**

Start

↓

Un-Lock WDT

O 2E 87 ; Un-lock super I/O

O 2E 87 ; Un-lock super I/O

↓

Set WDT Funtion

O 2E 2D

O 2F 20

Select Logic device

O 2E 07

O 2F 08

↓

Activate WDT

O 2E 30

O 2F 01

Set Second or Minute

O 2E F5

O 2F N N=00 or 08(See below table)

↓

Set base timer

O 2E F6

O 2F M=00,01,02,…FF(Hex) ,Value=0 to 255

↓

WDT counting

re-set timer

O 2E F6

O 2F M ; M=00,01,02,...FF(See below table)

↓

IF No re-set timer **WDT time-out, generate RESET**

IF to disable WDT

O 2E 30

O 2F 00 ; Can be disable at any time

N=00

M= 00h: Time-out Disable

01h: Time-out occurs after 1 second

02h: Time-out occurs after 2 second

03h: Time-out occurs after 3 second

……

FFh: Time-out occurs after 255 second

N=08

M= 00h: Time-out Disable

01h: Time-out occurs after 1 minute

02h: Time-out occurs after 2 minutes

03h: Time-out occurs after 3 minutes

……

FFh: Time-out occurs after 255 minutes

APPENDIX B
WARNING

- This is a class B Product. In a domestic Environment this Product may cause radio interference in which case the user may be required to take adequate measures.

- It will be danger if battery is incorrectly replaced. Replacing only with the same or equivalent type is highly recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Warning for Hard Disk Drive Selection:

TUV approved Hard Disk Drive is preferred for TUV compliance Hard Disk drive-Optional, (NWGQ2), generic, Input Voltage rated 5V dc/1.0A, 12V dc/1.8A maximum. Minimum clearance from uninsulated live parts 4.0 mm

"The equipment is to be installed in an environment with maximum ambient temperature must not exceed 45°C."

"The openings on the enclosure are for air convection hence protected the equipment from overheating.

DO NOT COVER THE OPENINGS."

"Lay this equipment on a reliable surface when install.

A drop or fall could cause injury."

"The equipment shall be installed according to specification as nameplate. Make sure the voltage of the power source when connect the equipment to the power outlet.

The current of load and output power of loads shall be not over the specification.""This equipment must be connected to the reliable earthling before using."

Electric shock hazard inside the redundant power supply

The exchange of modules shall be done by service person.

MEMO: